

**AFFIDAVIT**

I, Andreas ELEFTHERIOU, do hereby declare and state as follows:

1. I graduated from Ryerson University with a degree in Mechanical engineering.
2. I have been employed with Pratt & Whitney Canada Corp. for twenty-six (26) years.
3. I have been working in the Advanced Engine Design department and one of my main roles is to design engine concepts and components.
4. I am a co-inventor of the integrated turbofan engine casing described and claimed in United States Patent Application No. 10/628,556 filed July 20, 2003.
5. Conventional turbofan case assemblies are typically segmented and comprise, among others, a fan case, an intermediate case and a gas generator case.
6. "Fan case" is a term of the art referring to the casing part encircling the fan rotor assembly. The fan case must be strong enough to ensure containment of blade-off incidents.
7. "Gas generator case" is a term of the art used to designate the casing part housing the combustor. The gas generator case must be able to sustain high temperatures and pressures.
8. The intermediate case is a term of the art for the case portion between the fan case and the gas generator case. Intermediate case is the main structure of the engine and carries the front engine mounts.
9. The fan case, the gas generator case and the intermediate case perform different functions and are subject to different operating conditions and, as such, they are conventionally made of dissimilar materials and removably assembled together to permit assembly and disassembly of engine internal parts.
10. I have read and understood the references cited by the U.S. Examiner in the Office Action dated May 1, 2007.
11. U.S. Patent No. 3,814,549 to Cronstedt omits so many basic casing design details, such as blade containment, thermal mismatch, assembly of the engine components

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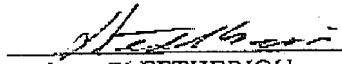
in the engine casing, that it does not reasonably suggest anything from an engine casing design point of view.

12. Cronstedt's portion 16 is not a compressor shroud. Item 32 is the compressor shroud. The figure shows a bolted flange at 16-17-32-34 (the connection 16-17-32 cannot possibly be welded, or there would be no access for assembling the compressor and casing components inside of item 16).
13. Cronstedt shows several flanges, (i.e. bolted) connections, such as 16-17-32-34 and such as 78-22, and such as 16-18. The interface of 18 and 32 (just upstream of the impeller 28) is a sliding joint connection. The interface between 18 and 32 must be a sliding joint if Cronstedt's engine is to be assembled.
14. U.S. Patent No. 4,122,872 to Lowrie says that fan case components 18, 20 and 24 can be welded together, but does not describe how the connection with the intermediate case or the gas generator case is made. Fan case components 18, 20 and 24 do not form part of the intermediate case. Lowrie's intermediate case begins in the vicinity of the unnumbered strut/vane downstream of annulus 24.
15. U.S. Patent No. 4,722,184 to Chaplin et al. shows, in Fig. 2, a bolted connection between fan case 44 and exit fan case 46. The engine case is, thus, not integral. The strut 52, the fan exit case 46 and the engine casing provides the intermediate case. Chaplin et al. does not mention how this intermediate case attaches to the gas generator case.
16. U.S. Patent No. 6,532,731 to Springer does not reasonably suggest how to make a turbofan case, since it does not disclose any casing design elements that have to be considered when designing a turbofan casing. Springer's engine, shown in Figs. 1 to 4, is conceptual only, as evidenced by the fact that it would not physically assemble if materialized as shown.
17. Fig. 1 of U.S. Patent No. 4,790,133 to Stuart only shows a conceptual engine which could not be assembled as shown. Too many casing details are missing to be able to draw any meaningful conclusion. It would be impossible to physically assemble some parts of the engine if Fig. 1 was depicting a real engine.

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18. I have also reviewed the other cited references and can affirm that none of them discloses any information that could reasonably suggest integrating a fan case, an intermediate case and a gas generator case.

AND I HAVE SIGNED



Andreas ELEFTHERIOU

SWORN to before me at MISSISSAUGA,  
Canada, this 1<sup>st</sup> day of  
October, 2007.



J.B. Rockford  
Commissioner for Oaths

J.W. BEE MARCH 2008, a Commissioner, etc.  
Province of Ontario, for Ogilvy Renault LLP / S.E.N.C.R.L., and  
Barristers and Solicitors.  
Expires June 7, 2010.